

## CLAIMS:

1. A method for recording information on an optical disc comprising a first layer of a first material and a second layer of a second material, the method comprising irradiating a region of the optical disc with a dose of laser energy where the first material of the first layer reacting with the second material of the second layer in the region irradiated with the dose of laser energy,  
5 characterized in that a third layer, located between the first layer and the second layer when irradiated with a dose of laser energy only enables the reaction between the first material and the second material in the region irradiated by the laser dose.
- 10 2. A method for recording information on an optical disc as claimed in claim 1, characterized in that the reaction is a chemical reaction
3. A method for recording information on an optical disc as claimed in claim 1, characterized in that the reaction is a melting to form an alloy of the first material and the  
15 second material
4. A method for recording information on an optical disc as claimed in claim 1, characterized in that the reaction is an organic reaction
- 20 5. A method for recording information on an optical disc as claimed in claim 1, characterized in that the reaction is enabled by permanently altering the region in the third layer.
- 25 6. A method for recording information on an optical disc as claimed in claim 1, characterized in that the permanently altering is achieved by irradiating an organic material in the third layer.

7. A method for recording information on an optical disc as claimed in claim 1, characterized in that the third layer requires a higher dose of laser energy for enabling the reaction than required for the reaction of the first material with the second material.
- 5 8. A method for recording information on an optical disc as claimed in claim 1, characterized in that the first material is Si and that the second material is Cu.
9. A method for recording information on an optical disc as claimed in claim 1, characterized in that the first material is Bi and that the second material is Sn.
- 10 10. A method for recording information on an optical disc as claimed in claim 1, characterized in that the first material is In and that the second material is Sn.
11. A method for recording information on an optical disc as claimed in claim 1, characterized in that the third layer comprises a third material selected from the group of ZnS, SiO<sub>2</sub>, SiC, Al<sub>2</sub>O<sub>3</sub>, SiN.
- 15 12. A method for recording information on an optical disc as claimed in claim 1, characterized in that the information is recorded using multilevel recording.
- 20 13. A method for recording information on an optical disc as claimed in claim 1, characterized in that the multilevel recording is performed by writing multiple overlapping marks.
- 25 14. A record carrier comprising a first layer of a first material and a second layer of a second material characterized in that a third layer of a third material is located between the first layer and the second layer that enables a reaction between the first material and the second material in a region when irradiated in that region.
- 30 15. A record carrier as claimed in claim 14, characterized in that the reaction is a chemical reaction.

16. A record carrier as claimed in claim 14,  
characterized in that the reaction is a melting to form an alloy of the first material and the second material
- 5 17. A record carrier as claimed in claim 14,  
characterized in that the reaction is enabled by permanently altering the third layer.
18. A record carrier as claimed in claim 14,  
characterized in that the third layer requires a higher dose of laser energy for enabling the  
10 reaction than required for the reaction of the first material with the second material.
19. A record carrier as claimed in claim 14,  
characterized in that the first material is Si and that the second material is Cu
- 15 20. A record carrier as claimed in claim 14,  
characterized in that the first material is Bi and that the second material is Sn
21. A record carrier as claimed in claim 14,  
characterized in that the first material is In and that the second material is Sn  
20
22. A record carrier as claimed in claim 14,  
characterized in that the third layer comprises a third material selected from the group of  
ZnS-SiO<sub>2</sub>, SiC, Al<sub>2</sub>O<sub>3</sub>, Si<sub>3</sub>N<sub>4</sub>, SiO<sub>2</sub>, C, KCl, LiF, NaCl, Pt, Au, Ag.
- 25 23. A record carrier as claimed in claim 14 to 20,  
characterized in that the record carrier comprises a further recording layer.
24. A recording device for recording information on an optical disc comprising a  
control circuit for controlling a dose of irradiation emitted by a laser and a detection circuit  
30 for detecting a type of an optical disc,  
characterized in that the control circuit, when the detection circuit detects a record carrier  
comprising a first layer of a first material and a second layer of a second material where a  
third layer of a third material is located between the first layer and the second layer where  
that third layer enables a reaction between the first material and the second material in a

region when that third layer is irradiated in that region with a dose of irradiation, adjusts the dose of irradiation such that the third layer enables the reaction.

25. A recording device for recording information on an optical disc as claimed in  
5 claim 24,  
characterized in that the recording is a multilevel recording

26. A recorder for recording information on an optical disc as claimed in claim 25,  
characterized in that the control circuit of the recorder controls the irradiation emitted by the  
10 laser such that one region is irradiated or multiple overlapping regions are irradiated.